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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/700,474	11/05/2003	Chien-Meen Hwang	95-536	7755

20736 7590 02/09/2007

MANELLI DENISON & SELTER
2000 M STREET NW SUITE 700
WASHINGTON, DC 20036-3307

EXAMINER	
TORRES, JUAN A	
ART UNIT	PAPER NUMBER
2611	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	02/09/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/700,474	HWANG ET AL.	
	Examiner	Art Unit	
	Juan A. Torres	2611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *05 November 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-10* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-10* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *05 November 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *01-30-2004*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Information Disclosure Statement

The information disclosure statement (IDS) submitted on 01/30/2004 is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

Specification

The disclosure is objected to because of the following informalities: the recitation in page 1 line 18; page 3 lines 16, 17 and 29; page 4 line 4; page 5 line 22; and page 6 lines 2, 5 and 10 "IEEE 802.11" seems to be improper, because is making reference to the OFDM version of the IEEE802.11 standard that is the IEEE 802.11a standard; the IEEE 802.11 standard only discloses the Frequency Hopping Spread Spectrum (FHSS) (section 14 pages 148-194 of the IEEE 802.11 standard); the Direct Sequence Spread Spectrum (DSSS) (section 15 pages 195-223 of the IEEE 802.11 standard); and the Infrared (IR) (section 16 pages 224-240 of the IEEE 802.11 standard) versions of the standards; it is suggested to be changed to "IEEE 802.11a".

Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-10 are rejected under 35 U.S.C. 102(b) as being anticipated by Moose (US 20020065047 A1) (with Rawlins (US 7010559 B2) figure 1 and Baldwin (US 20040228424 A1) figure 3 for inherency of FIR filtering and accumulation inside of correlation).

As per claims 1 and 6, Moose discloses recovering first and second components from the wireless signal by mixing the wireless signal with first and second carrier frequency signals, respectively, the second carrier frequency signal phase- shifted by a prescribed amount relative to the first carrier frequency signal (paragraphs [0025] and [0038], QPSK and QAM signals have first and second components from the wireless signal by mixing the wireless signal with first and second carrier frequency signals, respectively, the second carrier frequency signal phase- shifted by a prescribed amount relative to the first carrier frequency signal. This limitation is also disclosed in Applicant Admitted Prior Art in figure 1); determining first and second DC offset components based on filtering prescribed subcarrier components from a prescribed preamble portion of each of the first and second components, respectively (figure 4 paragraphs [0026] to [0032], see Rawlins figure 1, column 3 lines 36-42 or Baldwin figure 3 for inherency of the filtering to produce the correlation); and outputting corrected first and second components of the wireless signal, for recovery of the data, based on removing the first and second DC offset components from the first and second components, respectively (figure 4 paragraphs [0026] to [0032]).

As per claims 2 and 7, Moose discloses claims 1 and 6, Moose also discloses supplying the first and second components to a digital finite-impulse-response filter

configured for filtering the prescribed subcarrier components and outputting filtered samples (figure 4 paragraphs [0026] to [0032], see Rawlins figure 1, column 3 lines 36-42 for inherency of the filtering to produce the correlation); and averaging the filtered samples associated with the prescribed preamble portion to obtain the first and second DC offset components (figure 4 paragraphs [0026] to [0032], see Rawlins figure 1, column 3 lines 36-42 for inherency of the filtering and accumulation to produce the correlation the integrator, paragraphs [0026] to [0032]).

As per claims 3 and 8, Moose discloses claims 2 and 7, Moose also discloses accumulating the filtered samples from within the prescribed preamble portion, the prescribed preamble portion identified based on detecting a first and a last of a prescribed number of short training symbols in the data (figure 4 paragraphs [0026] to [0032], see Rawlins figure 1, column 3 lines 36-42 for inherency of the filtering and accumulation to produce the correlation the integrator, paragraphs [0026] to [0032]).

As per claims 4 and 9, Moose discloses claims 3 and 8, Moose also discloses detecting the short training symbols, including detecting the first and the last of the short training symbols, each of the short training symbols including the prescribed subcarrier components, the filtering including removing the prescribed subcarrier components from each short training sample for generation of the corresponding filtered sample (figure 1-4 paragraphs [0025] to [0032]).

As per claims 5 and 10, Moose discloses claims 4 and 9, Moose also discloses that the first and second components are I and Q components, respectively, the filtering including outputting the filtered samples in response to assertion of a signal

representing the detection of the short training symbols (figure 1-4 paragraphs [0025] to [0032], see Rawlins figure 1, column 3 lines 36-42 for inherency of the filtering and accumulation to produce the correlation the integrator); the averaging step further includes normalizing the accumulated filtered samples relative to a number of samples having been accumulated to obtain the first and second DC offset components (figure 1-4 the integrator makes the normalization, paragraphs [0025] to [0032], see Rawlins figure 1, column 3 lines 36-42 for inherency of the filtering and accumulation to produce the correlation the integrator).

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Carleton (US 6757344 B2) discloses measuring sub-carrier frequencies and sub-carrier frequency offsets. Sakoda (US 6816555 B2) discloses signal component demultiplexing, filtering, receiving in a communication system. Cupo (US 6961393 B1) In-band-on-channel (IBOC) system and methods of operation using orthogonal frequency division multiplexing (OFDM) with timing and frequency offset correction. Chang (US 7103090 B2) discloses timing estimation of direct sequence spread spectrum communications systems over frequency-selective, slowly fading channels. Ryan (US 7151759 B1) discloses automatic gain control and low power start-of-packet detection for a wireless LAN receiver. Heiskala ("OFDM wireless LANs: A theoretical and practical guide", SAMS 2002 pages 66-73) discloses frequency offset in OFDM. Moose ("A technique for orthogonal frequency division multiplexing frequency offset correction", IEEE Transactions on Communications, Volume 42, Issue 10, Oct.

1994 Page(s): 2908 – 2914) discloses a technique for orthogonal frequency division multiplexing frequency offset correction. Miaoudakis ("Carrier frequency offset estimation and correction for Hiperlan/2 WLANs", Proceedings, ISCC 2002, Seventh International Symposium on Computers and Communications, 2002. 1-4 July 2002 Page(s): 693 – 698) discloses Carrier frequency offset estimation and correction for Hiperlan/2 WLANs. Jian Li ("Carrier frequency offset estimation for OFDM-based WLANs", IEEE Signal Processing Letters, Volume 8, Issue 3, March 2001 Page(s): 80 – 82) discloses Carrier frequency offset estimation for OFDM-based WLANs.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Juan A. Torres whose telephone number is 571-272-3119. The examiner can normally be reached on 8-6 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mohammad Ghayour can be reached on 571-272-3021. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Juan Alberto Torres
01-25-2007

TEMESGHEN GHEBRETINSAE
PRIMARY EXAMINER